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10/681,319	10/09/2003	Satoshi Asano	031175	3377

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EXAMINER	
MCNELIS, KATHLEEN A	

ART UNIT	PAPER NUMBER
1742	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

Office Action Summary	**Application No.** 10/681,319	**Applicant(s)** ASANO ET AL.	
	Examiner Kathleen A. McNelis	**Art Unit** 1742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 April 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4,6-12 and 14-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,6-12 and 14-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Claims Status

Claims 1-4, 6-12 and 14-19 remain for examination

Status of Previous Rejections

The following rejections are maintained:

- Claims 1, 3, 4, 7, 9, 11, 12, 15, and 17-19 under 35 U.S.C. 103(a) as being unpatentable over Bruening et al. (U.S. Pat. No. 5,120,443) in view of Japanese Patent 62-238337 (JP '337),
- Claims 2, 6, 10 and 14 under 35 U.S.C. 103(a) as being unpatentable over Bruening et al. (U.S. Pat. No. 5,120,443) in view of Japanese Patent 62-238337 (JP '337) as applied to claim 1 and further in view of EP 1,167,555 (EP '555),
- Claims 8 and 16 under 35 U.S.C. 103(a) as being unpatentable over Bruening et al. (U.S. Pat. No. 5,120,443) in view of Japanese Patent 62-238337 (JP '337) as applied to claim 1 and further in view of Ji et al. (U.S. Pat. No. 6,660,059),
- Claims 1, 3, 4, 7, 9, 11, 12, 15, and 17-19 under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent 62-238337 (JP '337) in view of Fieberg et al. (U.S. Pat. No. 4,105,443) and Bruening et al. (U.S. Pat. No. 5,120,443),
- Claims 2, 6, 10 and 14 under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent 62-238337 (JP '337) in view of Fieberg et al. (U.S. Pat. No. 4,105,443) and Bruening et al. (U.S. Pat. No. 5,120,443) as applied to claim 1, and further in view of EP 1,167,555 (EP '555), and
- Claims 8 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent 62-238337 (JP '337) in view of Fieberg et al. (U.S. Pat. No. 4,105,443) and Bruening et al. (U.S. Pat. No. 5,120,443) as applied to claim 1, and further in view of Ji et al. (U.S. Pat. No. 6,660,059).

DETAILED ACTION

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1, 3, 4, 7, 9, 11, 12, 15, and 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bruening et al. (U.S. Pat. No. 5,120,443) in view of Japanese Patent 62-238337 (JP '337).

Bruening et al. in view of JP '337 is applied as set forth in the 01/09/2007 Office action.

Claims 2, 6, 10 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bruening et al. (U.S. Pat. No. 5,120,443) in view of Japanese Patent 62-238337 (JP '337) as applied to claim 1 and further in view of EP 1,167,555 (EP '555).

Bruening et al. in view of JP '337 and EP '555 is applied as set forth in the 01/09/2007 Office action.

Claims 8 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bruening et al. (U.S. Pat. No. 5,120,443) in view of Japanese Patent 62-238337 (JP '337) as applied to claim 1 and further in view of Ji et al. (U.S. Pat. No. 6,660,059).

Bruening et al. in view of JP '337 and Ji et al. is applied as set forth in the 01/09/2007 Office action.

Claims 1, 3, 4, 7, 9, 11, 12, 15, and 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent 62-238337 (JP '337) in view of Fieberg et al. (U.S. Pat. No. 4,105,443) and Bruening et al. (U.S. Pat. No. 5,120,443).

JP '337 in view of Fieberg et al. and Bruening et al. is applied as set forth in the 01/09/2007 Office action.

Claims 2, 6, 10 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent 62-238337 (JP '337) in view of Fieberg et al. (U.S. Pat. No. 4,105,443) and Bruening et al. (U.S. Pat. No. 5,120,443) as applied to claim 1, and further in view of EP 1,167,555 (EP '555).

JP '337 in view of Fieberg et al., Bruening et al. and EP '555 is applied as set forth in the 01/09/2007 Office action.

Claims 8 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent 62-238337 (JP '337) in view of Fieberg et al. (U.S. Pat. No. 4,105,443) and Bruening et al. (U.S. Pat. No. 5,120,443) as applied to claim 1, and further in view of Ji et al. (U.S. Pat. No. 6,660,059).

JP '337 in view of Fieberg et al., Bruening et al. and Ji et al. is applied as set forth in the 01/09/2007 Office action.

Response to Arguments

Applicant's arguments filed 04/04/2007 have been fully considered but they are not persuasive.

Arguments are summarized as follows:

1. The polyamine-based anion exchange resin used in the present invention is different from the anion exchange resins used in Bruening et al. and JP '337 in that the present invention shows selective absorptive against PGM compounds as discussed on p. 7 of the specification.
2. Bruening et al. discloses the use of a polyalkylene-polyamine containing ligand however as described on p. 7 lines 1-5 the polyamine-based anion exchange resin used in the present invention has amino groups each serving as the functional group and composed of primary to tertiary amines. The polyalkylene-polyamine containing

ligand covalently bonded through an organic spacer silicon grouping to a solid inorganic support does not satisfy these requirements.

3. JP '337 does not disclose a polyamine-based ion exchange resin.
4. Bruening et al. does not disclose an example using an aqueous solution of water and thiourea as an eluting solution.
5. JP '337 discloses a mixture of 0.1 N HCl and 0.1 M thiourea and therefore does not teach an aqueous solution consisting of water and thiourea or a first aqueous solution consisting of water and thiourea and then a second aqueous solution consisting of water and HCl successively. The instant invention has therefore eliminated an element and is unobvious.
6. EP '555 does not overcome the shortcomings of Bruening et al. and JP '337.
7. Ji et al. does not overcome the shortcomings of Bruening et al., JP '337 and EP '555.
8. Fieberg et al. does not remedy the deficiencies of Bruening et al. and JP '337 discussed above. There are no teachings in Fieberg et al. suggesting the polyamine based ion exchange resin (fibers), therefore selective separation of PGM "irrespective of its form" is not achieved in Fieberg et al.
9. There is no motivation to combine Fieberg et al. with JP '337.

Examiner's responses are as follows:

1. The polyamine-based anion exchange resin disclosed in Bruening et al. in view of JP '337 meets the claimed limitations of "a polyamine-based anion exchange resin" (claim 1). Further, Bruening et al. discloses absorbing Rh, Ir and/or Ru (abstract and col. 3 lines 19-30) where Rh, Ir and Ru are PGM, and although the translation of JP '337 uses the general term "noble metals", note that in Application Example 1 JP '337 discloses Pt and Pd absorption (pp. 7-8), where Pt and Pd are PGM.
2. It is noted that the features upon which applicant relies (i.e., the specific functional groups of the polyamine resin) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

3. Bruening et al. teaches a polyamine bonded to solid inorganic support as discussed above regarding argument 1. Bruening et al. discloses tertiary or quaternary amines as suitable polyamine compounds (col. 3 lines 19-45). JP '337 discloses the use of primary-quaternary amines as ion exchange resins in the same field of endeavor and teaches elution of PGM in an HCl/thiourea solution from such as discussed on p. 4 of the 01/09/2007 Office action.
4. Examiner has acknowledged this in the first paragraph on p. 4 of the 01/09/2007 Office action.
5. It is unclear how the instant invention has eliminated an element. Claim 1 recites two options as alternatives (i.e. either a solution consisting of water and thiourea **or** a first solution consisting of water and thiourea and then a second aqueous solution consisting of water and hydrochloric acid successively). Only one of these alternatives must be taught in the prior art to reject the claim. The rejection is based on the second alternative (see p. 4 of the 01/09/2007 Office action). The contacting sequence in the instant invention is according to the second alternative is:
   a. Thiourea + water, and
   b. HCl + water.

   The sequence disclosed in JP '337 is:
   a. Thiourea + HCl + water.

   The same elements (thiourea, HCl and water) are disclosed in the instant invention as in JP '337, however the contacting sequence is changed. Examiner's position as stated on p. 4 of the 01/09/2007 Office action is the change is sequence is prima facie obvious and that applicants have not shown the criticality of the sequence.
6. EP '555 is cited as a secondary reference teaching ORP and chloride concentration in the same field of endeavor as discussed on p. 5 of the 01/09/2007 Office action.
7. Ji et al. is cited as a secondary reference teaching a method for subsequent recovery of PGM as sulfide in the same field of endeavor as discussed on pp. 6-7 of the 01/09/2007 Office action.
8. JP '337 and Bruening et al. are discussed above regarding arguments 1-5. Fieberg et al. discloses washing quaternary and tertiary amines loaded with ruthenium to remove

impurities, and as such Fieberg et al. is cited as a secondary reference teaching washing loaded resins to remove impurities in the same field of endeavor as discussed on p. 8 of the 01/09/2007 Office action.

9. The motivation is taught by Fieberg as removal of impurities in the same field of endeavor as discussed on p. 8 of the 01/09/2007 Office action.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kathleen A. McNelis whose telephone number is 571 272 3554. The examiner can normally be reached on M-F 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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06/27/2007 Kam

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